



University of Natural Resources and
Life Sciences, Vienna

Department of
Water, Atmosphere, and Environment

How achieving SDG targets helps protecting species and conserving aquatic biodiversity

PD DI Dr. Günter Langergraber
IWA Fellow
Head of the Department

Seminar

*“As the sturgeon swims – Contribution of EU policies to achieve
the SDGs with special focus on protection of species“*

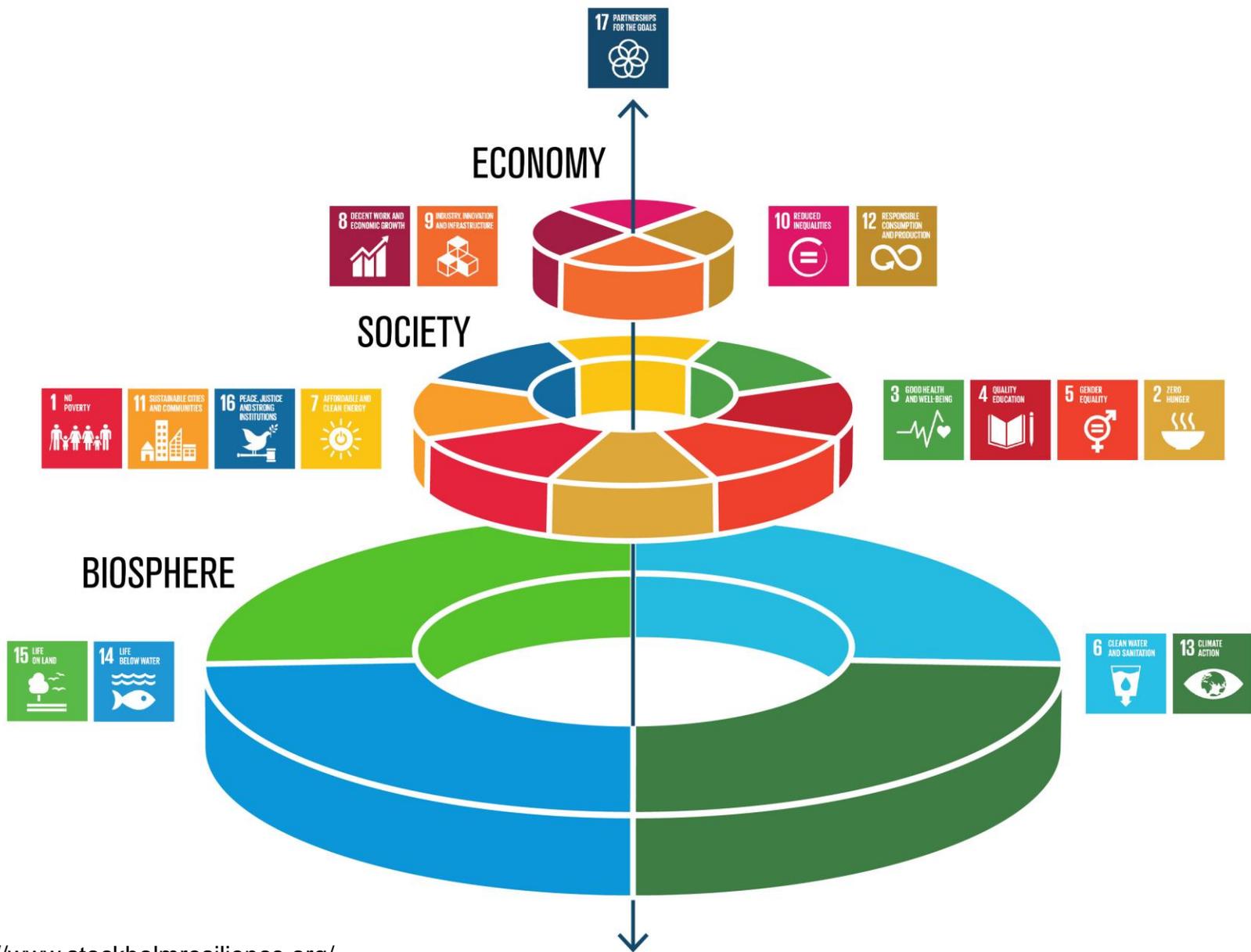
20 March 2019

Introduction to SDGs

17 Goals - 169 targets - 230 individual indicators



Sustainable development based on the indivisibility of economic prosperity, environmental sustainability, social progress, and effective democratic governance.

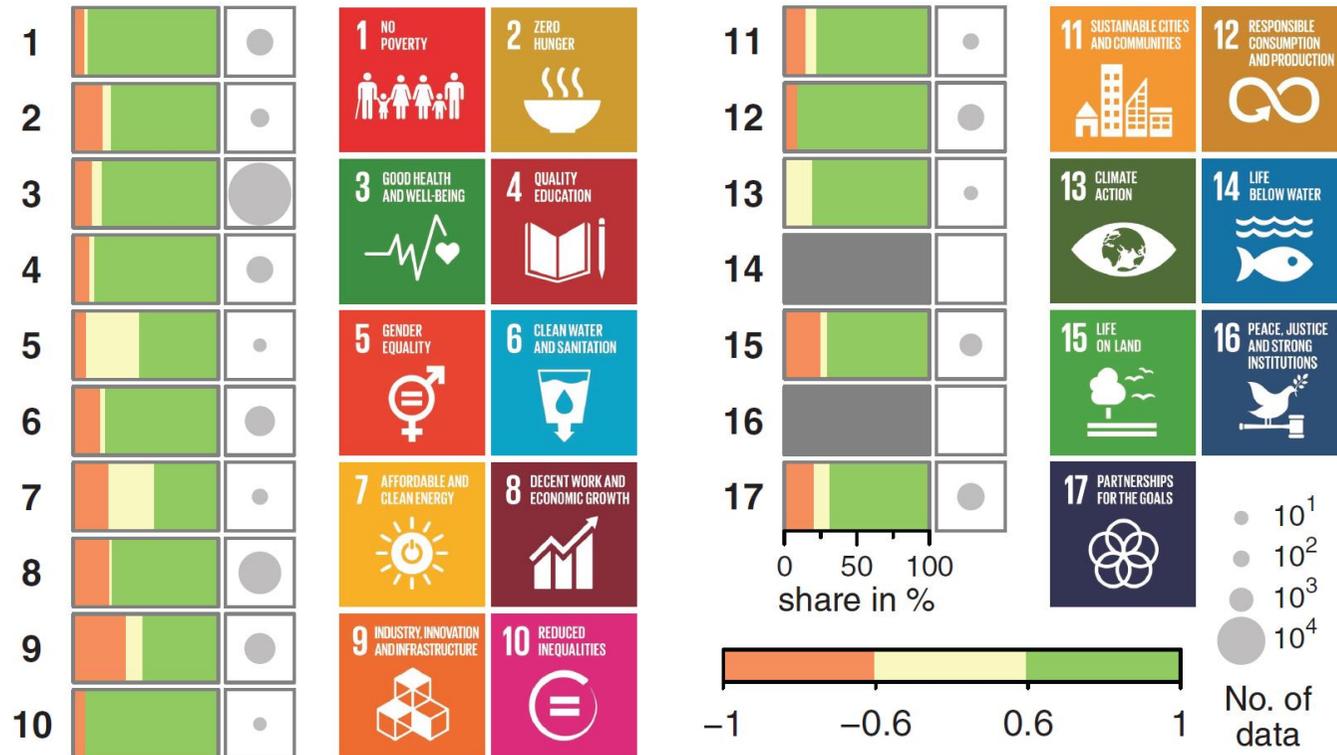


<http://www.stockholmresilience.org/>

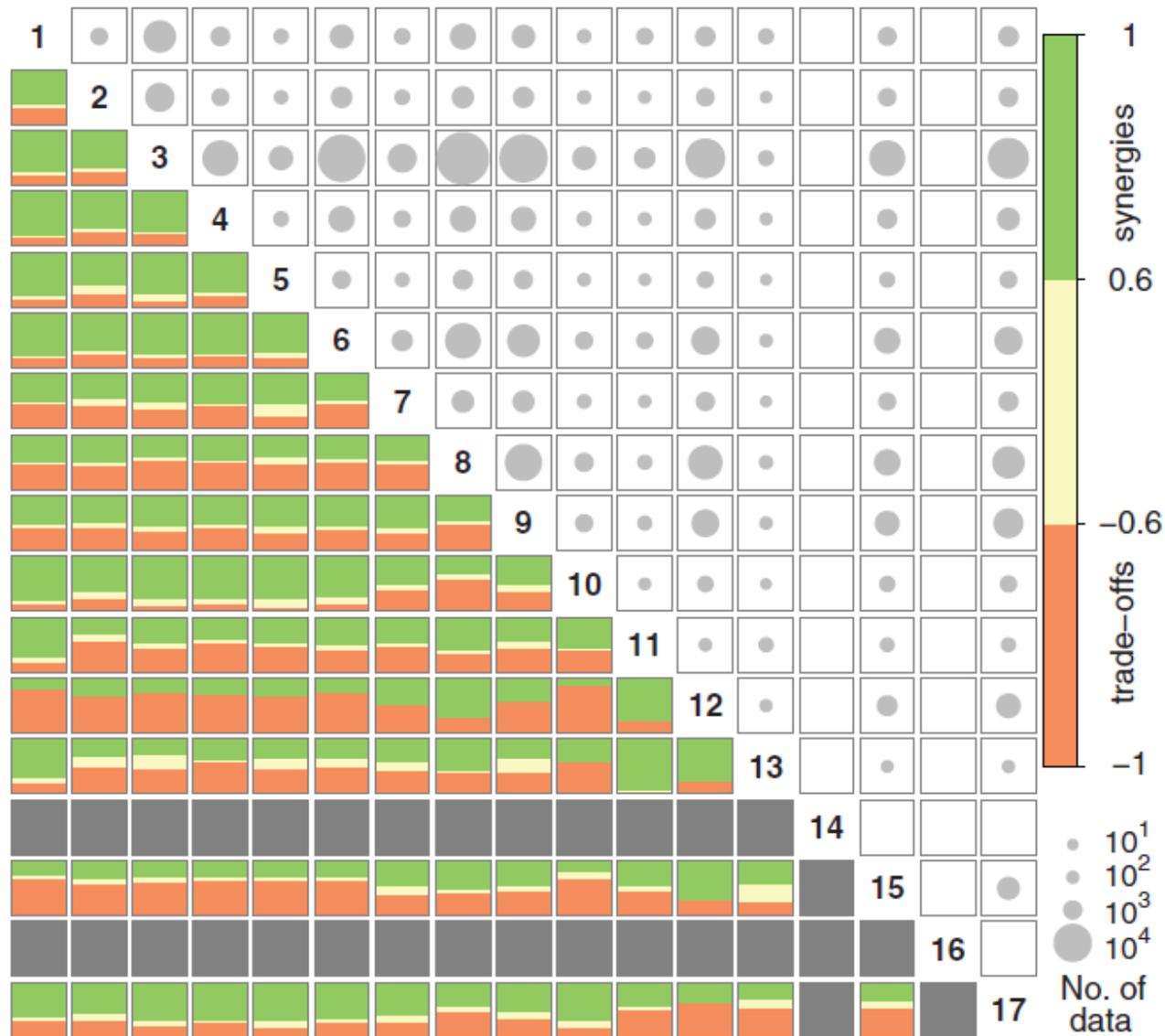
Graphics by Jerker Lokrantz

Introduction to SDGs

17 Goals - 169 targets - 230 individual indicators



Observed synergies (green) and trade-offs (orange) within an SDG (Pradhan et al. 2017, Earth's Future)



Observed synergies (green) and trade-offs (orange) between the SDGs (Pradhan et al. 2017, Earth's Future)

SDG 6 Water and sanitation

Overview



Targets (in short)

- 6.1 Safe drinking water for all
- 6.2 Adequate and equitable sanitation and hygiene for all and end open defecation
- 6.3 Improve water quality by reducing pollution
- 6.4 Increase water-use efficiency
- 6.5 Implement integrated water resources management
- 6.6 Protect and restore water-related ecosystems
- 6.A Expand international cooperation and capacity-building support to developing countries
- 6.B Participation of local communities

SDG 6 Overview



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MDG 7.C

(From 2000) to 2015 to half the number of people that have no access to

- **basic water supply** and
- **basic sanitation facilities.**



SDG 6 Targets (until 2030)

- 6.1 Safe drinking water for all
- 6.2 Adequate and equitable sanitation and hygiene for all and end open defecation
- 6.3 Improve water quality by reducing pollution
- 6.4 Increase water-use efficiency
- 6.5 Implement integrated water resources management
- 6.6 Protect and restore water-related ecosystems
- 6.A Expand international cooperation and capacity-building support to developing countries
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Target 6.1

- **By 2030, achieve universal and equitable access to safe and affordable drinking water for all**
- Bis 2030 den allgemeinen und gerechten Zugang zu einwandfreiem und bezahlbarem Trinkwasser für alle erreichen

Indicator 6.1.1

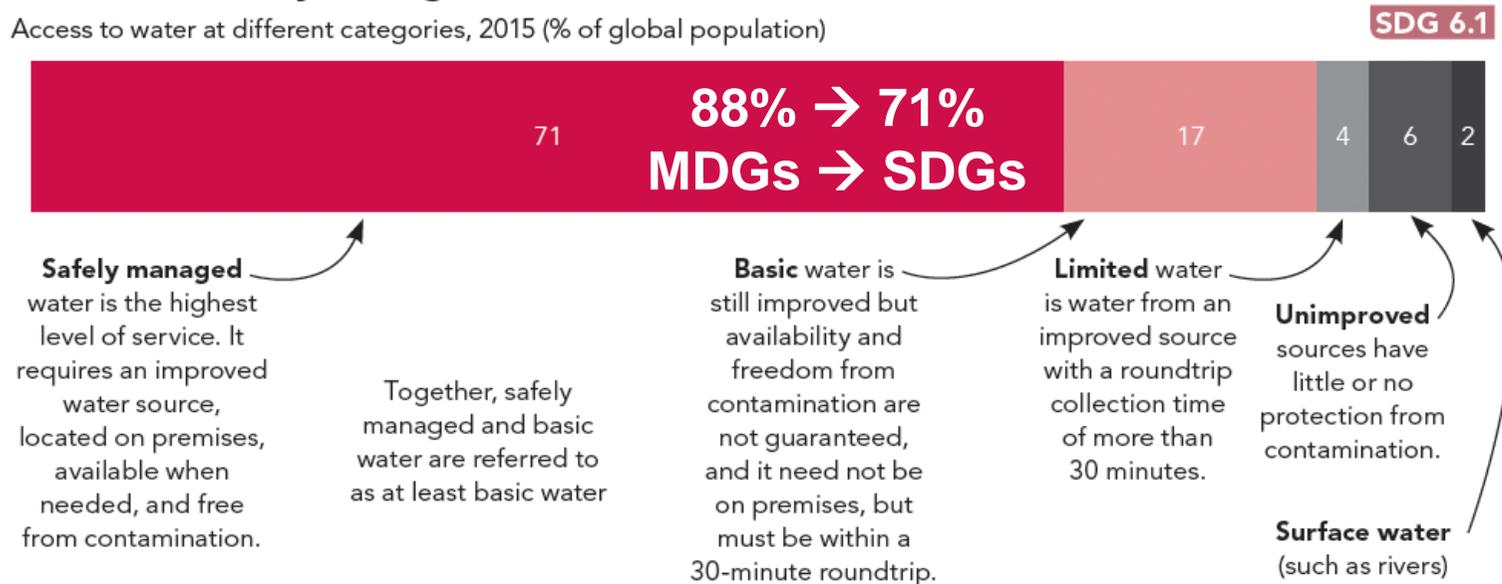
- **Proportion of population using safely managed drinking water services**
- Anteil der Bevölkerung mit Zugang zu einer sicheren Trinkwasserversorgung



Target 6.1 Indicator 6.1.1

Drinking water is essential to life, but only 71 percent of people have water that is considered safely managed.

Access to water at different categories, 2015 (% of global population)



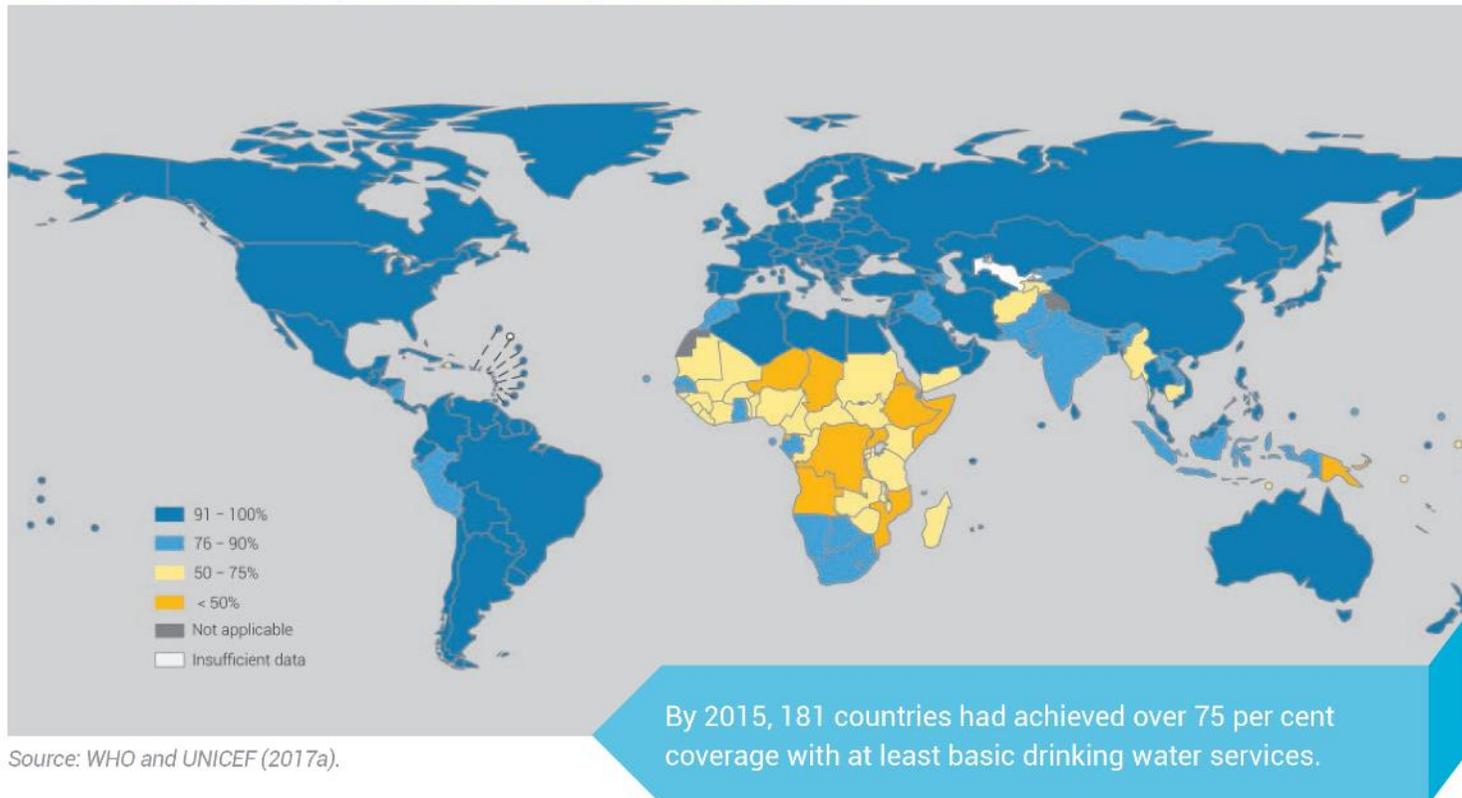
Source: WHO/UNICEF JMP for Water Supply, Sanitation and Hygiene, <https://washdata.org>. WDI (SH.H2O.SMDW.ZS; SH.BASW.ZS).

<http://datatopics.worldbank.org/sdgatlas/SDG-06-clean-water-and-sanitation.html>



Target 6.1

Proportion of population using at least basic drinking water services in 2015



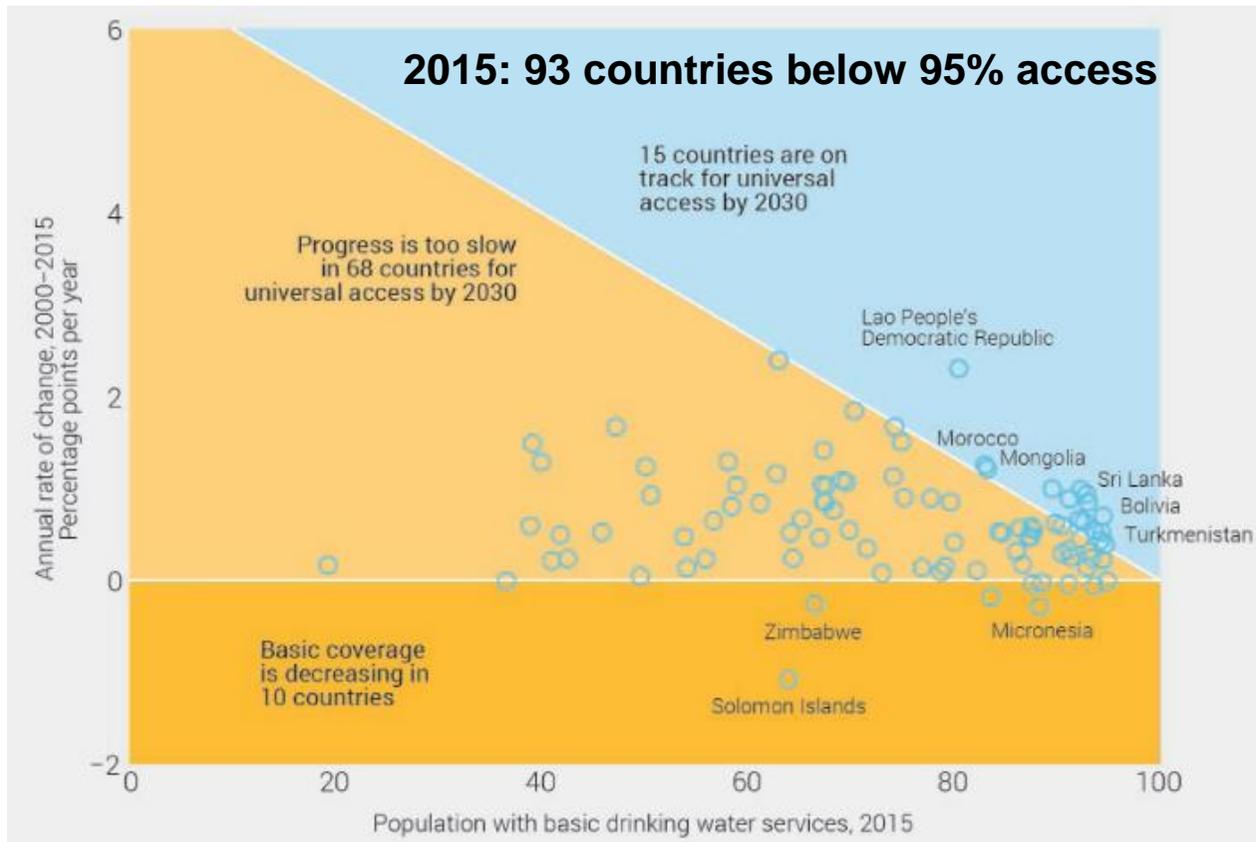
Source: WHO and UNICEF (2017a).

UN Water (2018) SDG6: Synthesis Report on Water and Sanitation

Target 6.1



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- 15 countries on track to reach safe and affordable drinking water for all in 2030
 - 10 countries in which access rate gets lower
- ➔ Only 1 out of 5 countries is on track to reach Target 6.1

(Data 2015)

UN Water (2018) SDG6: Synthesis Report on Water and Sanitation



Target 6.2

- **By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations**
- Bis 2030 den Zugang zu einer angemessenen und gerechten Sanitärversorgung und Hygiene für alle erreichen und der Notdurftverrichtung im Freien ein Ende setzen, unter besonderer Beachtung der Bedürfnisse von Frauen und Mädchen und von Menschen in prekären Situationen

Indicator 6.2.1

- **Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water**
- Anteil der Bevölkerung mit Zugang a) zu einer sicheren Sanitärversorgung und b) einem Handwaschbecken mit Seife und Wasser

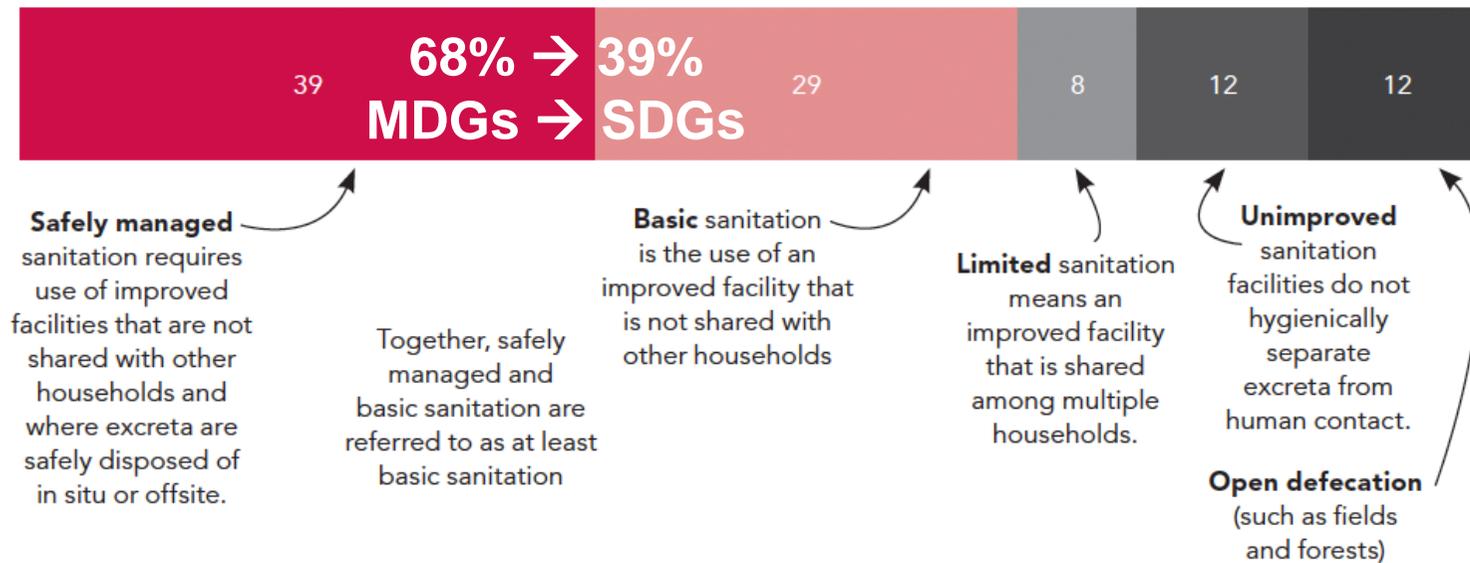


Target 6.2 Indicator 6.2.1

Globally, 6 in 10 people use sanitation facilities that are not safely managed and may contribute to the spread of disease.

Access to sanitation at different categories, 2015 (% of global population)

SDG 6.2



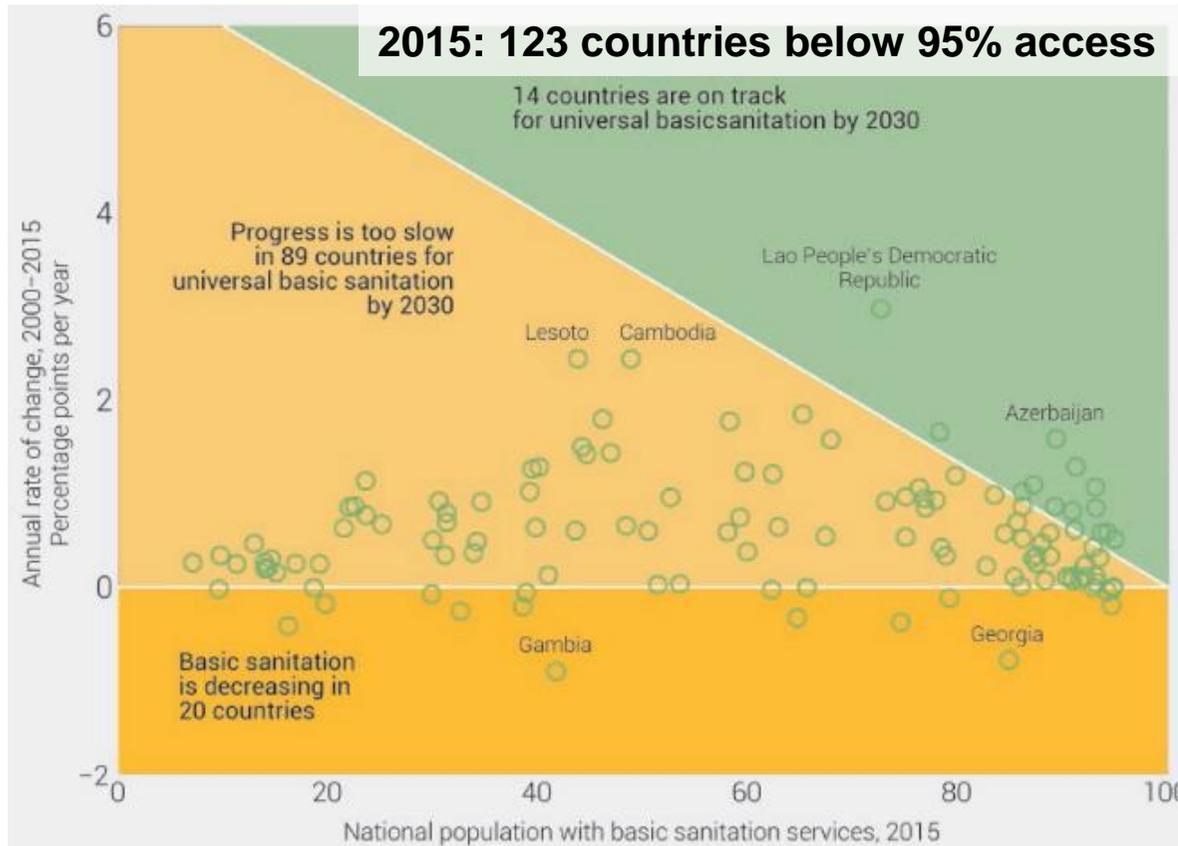
Source: WHO/UNICEF JMP for Water Supply, Sanitation and Hygiene, <https://washdata.org>. WDI (SH.STA.SMSS.ZS; SH.STA.BASS.ZS).

<http://datatopics.worldbank.org/sdgatlas/SDG-06-clean-water-and-sanitation.html>

Target 6.2



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14 countries on track to reach sanitation for all in 2030

20 countries in which access rate was getting lower

➔ Only 1 of 10 countries is on track to reach Target 6.2 !!

(Data 2015)

UN Water (2018) SDG6: Synthesis Report on Water and Sanitation



Target 6.3

- By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
- Bis 2030 die Wasserqualität durch Verringerung der Verschmutzung, Beendigung des Einbringens und Minimierung der Freisetzung gefährlicher Chemikalien und Stoffe, Halbierung des Anteils unbehandelten Abwassers und eine beträchtliche Steigerung der Wiederaufbereitung und gefahrlosen Wiederverwendung weltweit verbessern

Indicator 6.3.1

- **Proportion of wastewater safely treated**
- Anteil sicher behandeltes Abwasser

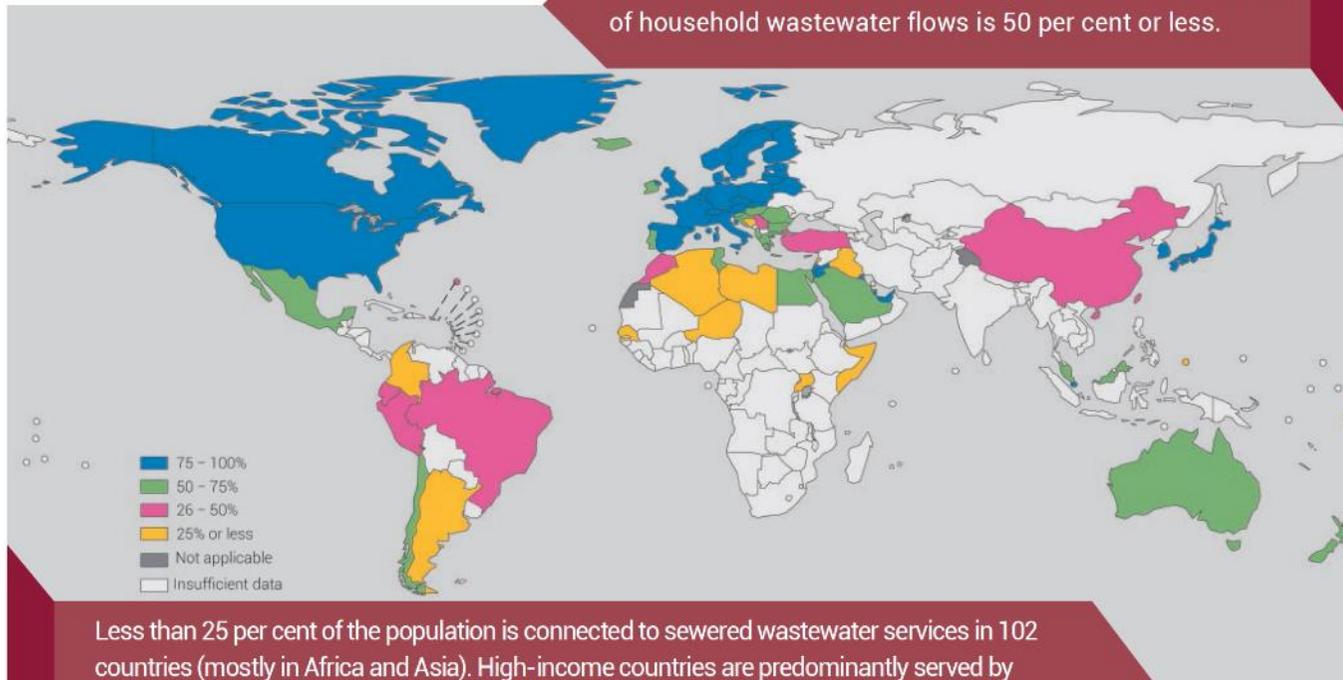
Indicator 6.3.2

- **Proportion of water bodies with good ambient water quality**
- Anteil der Gewässer mit guter Wasserqualität



Target 6.3 Indicator 6.3.1

In 22 of the 79 countries with data, the safe treatment level of household wastewater flows is 50 per cent or less.



Less than 25 per cent of the population is connected to sewerage services in 102 countries (mostly in Africa and Asia). High-income countries are predominantly served by sewerage, and treatment plant performance rates are higher. Low- and middle-income countries have predominantly on-site facilities and very few collect data on treatment for on-site facilities.

Data sources:
UN-Habitat; WHO.

Target 6.3



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- Although water quality problems are largely associated with developing countries, they also persist in developed countries and include the loss of pristine quality water bodies, impacts associated with changes in hydromorphology, the rise in emerging pollutants and the spread of invasive species.



Target 6.6

- **By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes**
- **Bis 2020 wasserverbundene Ökosysteme schützen und wiederherstellen, darunter Berge, Wälder, Feuchtgebiete, Flüsse, Grundwasserleiter und Seen**

Indikator 6.6.1

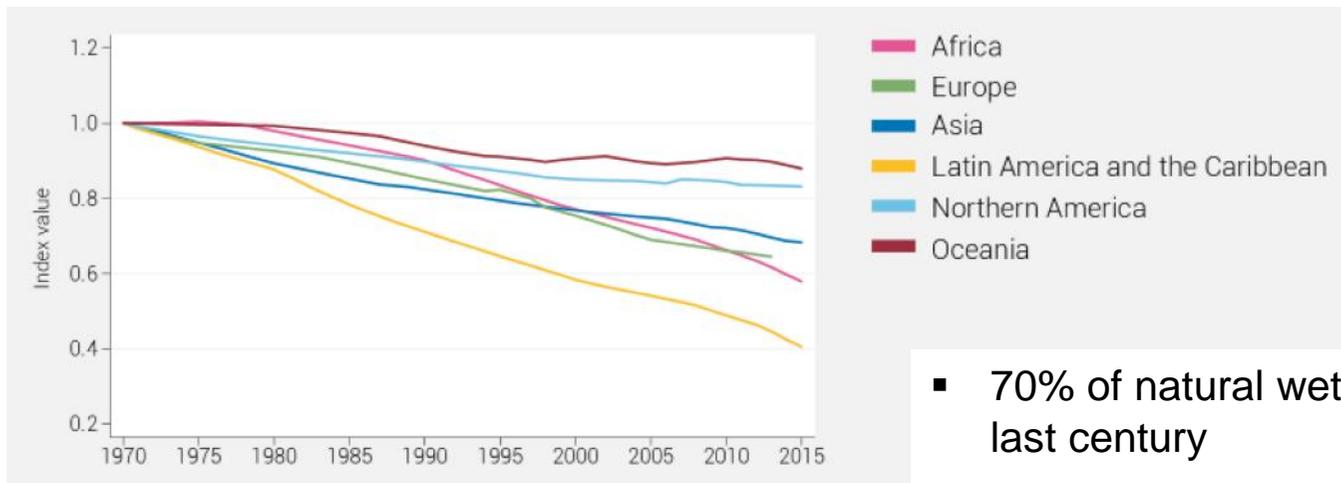
- **Change in the extent of water-related ecosystems over time**
- **Änderung der Wasserökosysteme**

Target 6.6 Indicator 6.6.1



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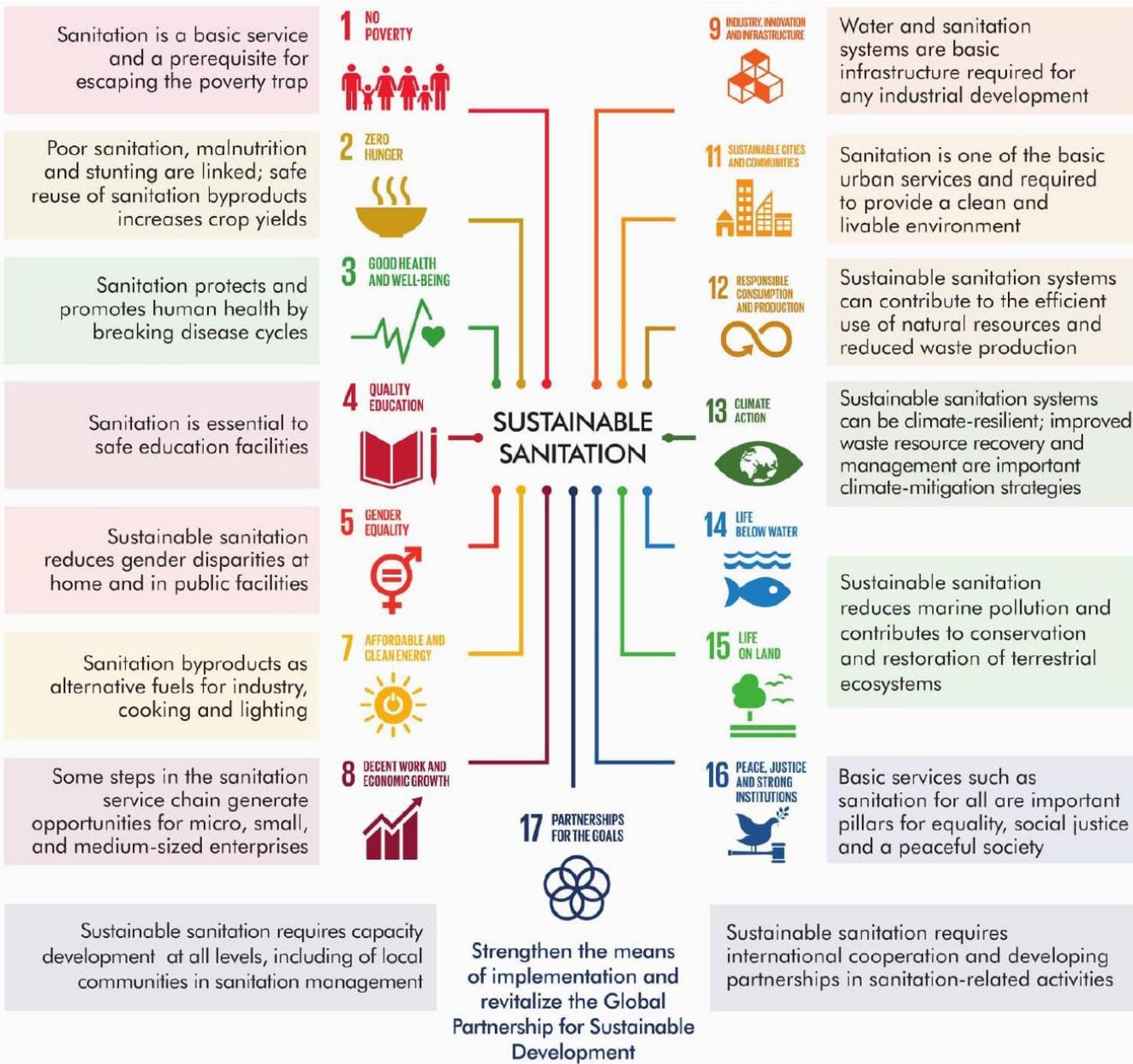
Wetland Extent Trend Index



UN Water (2018) SDG6: Synthesis Report on Water and Sanitation

- 70% of natural wetlands lost over last century
- 35% of carbon stored in wetlands (twice the amount as in forests)

SuSanA (2017)

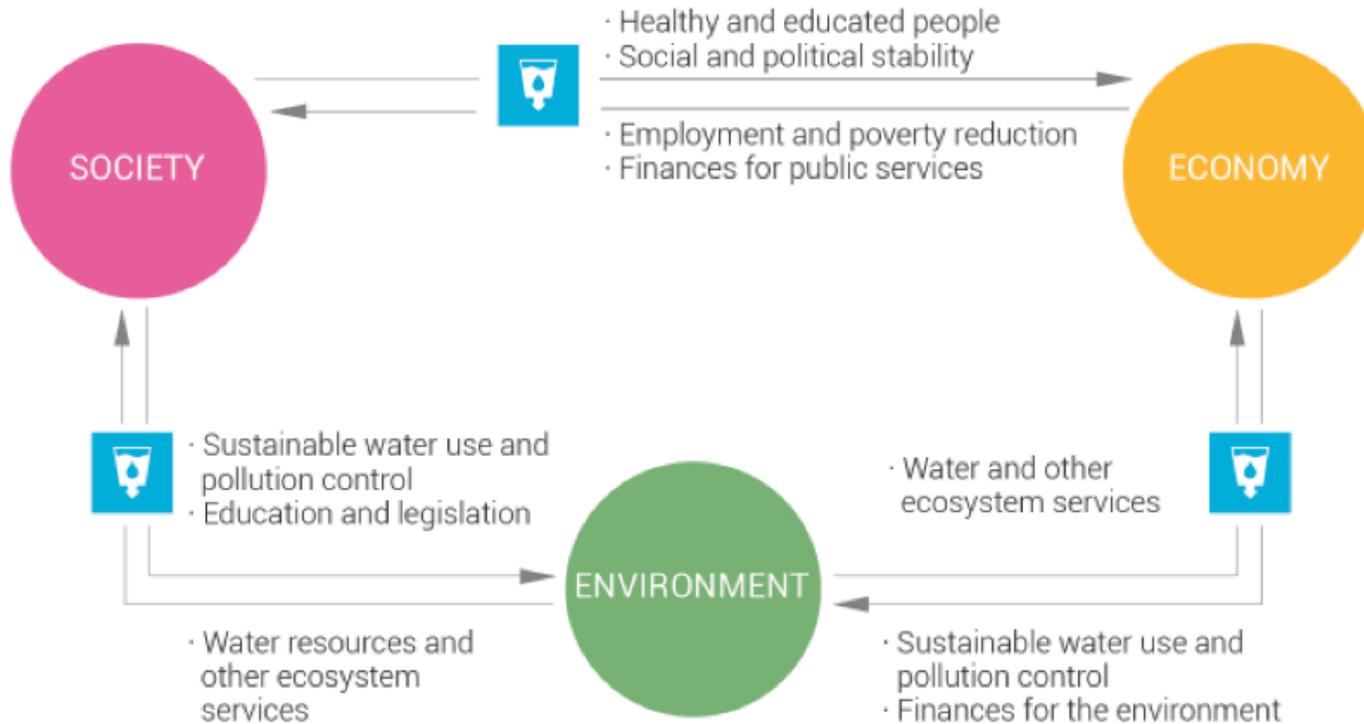


SDG 6 – more than water



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SDG 6 interlinks the three dimensions of sustainable development



UN Water (2018) SDG6: Synthesis Report on Water and Sanitation

SDGs and targets related to protecting species and conserving aquatic biodiversity



Target 6.3: Reducing pollution

Indicator 6.3.1: Proportion of wastewater safely treated

Indicator 6.3.2: Proportion of bodies of water with good ambient water quality

Target 6.6: Water-related ecosystems

Indicator 6.6.1: Change in the extent of water-related ecosystems over time



Target 15.1: Terrestrial and inland freshwater ecosystems

Indicator 15.1.2: Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas

Target 15.8: Impact of invasive alien species on land and water ecosystems

Indicator 15.8.1: Proportion of countries adopting relevant national legislation and adequately resourcing the prevention or control of invasive alien species

SDGs in the EU

Goal 6. Water and Sanitation



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Table 6.1: Indicators measuring progress towards SDG 6, EU-28

Indicator	Long-term trend (past 15 years)	Short-term trend (past 5 years)	Where to find out more
Sanitation			
Population having neither a bath, nor a shower, nor indoor flushing toilet in their household	↑ ⁽¹⁾	↑	page 122
Population connected to at least secondary wastewater treatment	:	:	page 123
Water quality			
Biochemical oxygen demand in rivers	↑ ⁽²⁾	↑	page 124
Nitrate in groundwater	↗ ⁽²⁾	↑	page 125
Phosphate in rivers	↑ ⁽²⁾	↘	page 126
Freshwater bathing sites with excellent water quality (*)	:	↑	SDG 14, page 271
Water use efficiency			
Water exploitation index	:	:	page 127

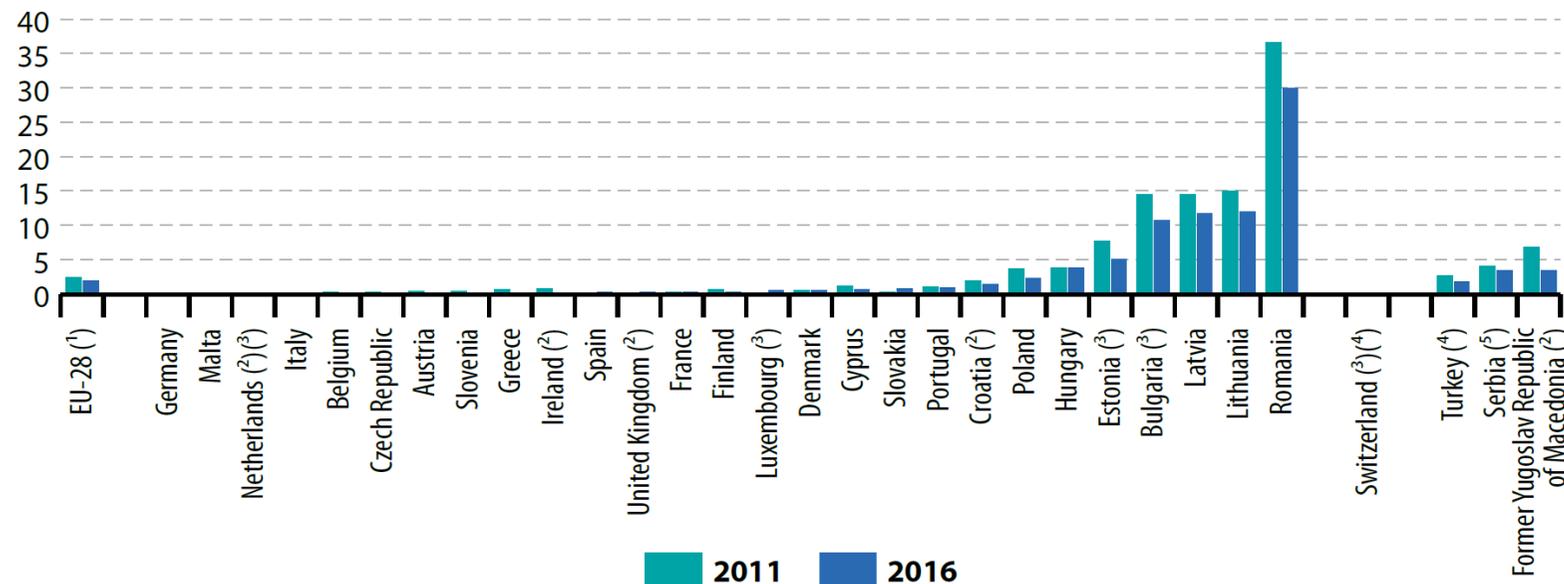
EU (2018 Edition) Sustainable development in the European Union – Monitoring report on progress towards the SSGs in an EU context.



SDGs in the EU

Goal 6. Water and Sanitation

Figure 6.2: Population having neither a bath, nor a shower, nor indoor flushing toilet in their household, by country, 2011 and 2016
(% of population)



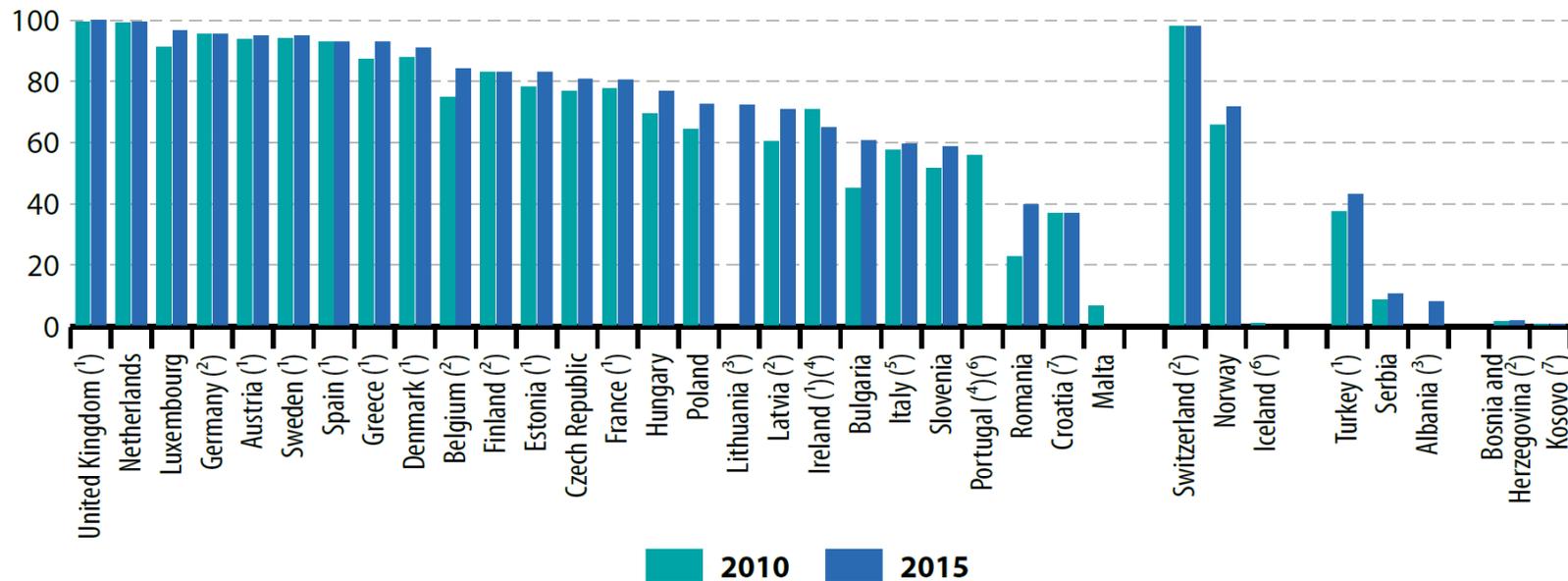
EU (2018 Edition) Sustainable development in the European Union – Monitoring report on progress towards the SSGs in an EU context.



SDGs in the EU

Goal 6. Water and Sanitation

Figure 6.3: Population connected to at least secondary wastewater treatment, by country, 2010 and 2015
(% of population)



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SDGs in the EU

Goal 6. Water and Sanitation



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Target 6.3 Improve water quality by reducing pollution

- **EU Urban WasteWater Treatment Directive (UWWTD, 1991)**
 - Aim: protect the environment from adverse effects of waste water discharges from urban areas and certain industrial sectors
 - effluent requirements for WWTPs > 2'000 persons
 - Effectiveness of UWWTD is evaluated by DG Environment
 - costs and effectiveness are key focus
 - e.g. workshops on 24 Oct 2018 on effect of micro-pollutants and on 25 Oct 2018 on effect of SWOs (StormWater Overflows) and IAS (Individual or Appropriate Systems)

SDGs in the EU

Goal 6. Water and Sanitation



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Target 6.3 Improve water quality by reducing pollution

- The **EU Water Framework Directive** aims to reach a 'good ecological status' for all water bodies in Europe. The definition includes parameters for a good chemical status (nitrogen, phosphorous and oxygen concentration) as well as biological status (occurrence of oligotrophic species composition).

SDGs in the EU

Goal 6. Water and Sanitation



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Target 6.3 Improve water quality by reducing pollution

- The **7th Environment Action Programme** sets the policy agenda for the years from 2015 to 2020 (nine priorities).
- Priorities 1, 2, 3, 5, 6 and 8 deal in particular with the improvement of the status of water resources.
- Furthermore, priority objectives 4 and 7 are aimed at improving the integrated implementation of environmental policy in general that is clearly important for the water sector as well as other sectors.



Living well, within
the limits of our planet

SDGs in the EU

Goal 15. Life on Land



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Table 15.1: Indicators measuring progress towards SDG 15, EU-28

Indicator	Long-term trend (past 15 years)	Short-term trend (past 5 years)	Where to find out more
Ecosystems status			
Share of forest area	:	↑ ⁽¹⁾	page 286
Biochemical oxygen demand in rivers (*)	↑ ⁽²⁾	↑	SDG 6, page 124
Nitrate in groundwater (*)	↗ ⁽³⁾	↑	SDG 6, page 125
Phosphate in rivers (*)	↑ ⁽²⁾	↓	SDG 6, page 126
Land degradation			
Artificial land cover per capita	:	↓ ⁽¹⁾⁽⁴⁾	page 287
Estimated soil erosion by water	↑ ⁽³⁾	:	page 289
Biodiversity			
Surface of terrestrial sites designated under Natura 2000	:	↗ ⁽⁵⁾	page 290
Common bird index	↓	↗	page 291
Grassland butterfly index	↓ ⁽⁶⁾	↓ ⁽⁶⁾	page 292

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SDGs in the EU

Goal 15. Life on Land



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Ecosystem status

- Indicators selected for monitoring ecosystem status assess **mainly abiotic parameters** indicating ecosystem health, including pollutants in rivers and in groundwater (WFD, Drinking Water Directive, Nitrate Directive) as well as the share of forests in total land area.

Biodiversity

- Assesses **living parts** of ecosystems and their state.
- The **EU Biodiversity Strategy** to 2020 sets out 6 targets and 20 actions to halt the loss of biodiversity and ecosystem services in the EU by 2020. The Habitats Directive and the Birds Directive play a central role in achieving these targets.

EU (2018 Edition) Sustainable development in the European Union – Monitoring report on progress towards the SSGs in an EU context.



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- Österreichs **U**niversitäten und die **N**achhaltigen **E**ntwicklungs**Z**iele
(Austrian Universities and the SDGs)
- Network of all Austrian Universities to
 - evaluate situation in Austria and prepare strategies/options for the Austrian government,
 - coordinate SDG activities of Austrian universities, and
 - facilitate anchoring of SDGs in teaching.
- Part of the performance contract between the universities and ministry
- Duration 3 years; Jan 2019 – Dec 2021
- Kick-off event 21+22 Jan 2019, University of Applied Arts Vienna
- BOKU **leads activities in SDGs 2, 6 and 15**, and contributes to activities in SDGs 1, 4, 7, 11, 12 and 13.

Summary

- SDGs are indivisible and aim to achieve sustainable development including economic prosperity, environmental sustainability, social progress, and effective democratic governance.
- High number of synergies but also trade-offs between the SDGs .
- SDG 6 (Water and sanitation) and SDG 15 (Life on Land) have targets/indicators related to protecting species and conserving aquatic biodiversity.
- Mainly abiotic parameters used to assess water quality and to indicate ecosystem health.
- “Good ecological status” in WFD includes biological status.



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